UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604

DATE: DEC 18 2013

SUBJECT: Clean Air Act Inspection of Cast-Fab Technologies, Cincinnati, Ohio

FROM: Eleanor Kane, Environmental Engineer
Air Enforcement and Compliance Assurance Section (WI/MI)

THRU: Sarah Marshall, Chief SM
Air Enforcement and Compliance Assurance Section (WI/MI)

TO: File

Date of Inspection September 23, 2013

Attendees Eleanor Kane, EPA, *Environmental Engineer*
Patrick Miller, EPA, *Environmental Engineer*
Amy Kesterman, Southwest Ohio Air Quality Agency, *Environmental Compliance Specialist*
Farley Houston, Cast-Fab, *Vice President, Human Resources*

Company Description and Background

Facility Location: 3040 Forrer Street, Cincinnati, Ohio 45209-1016

Primary Contact: Farley Houston, (513) 758-1008, fhouston@cast-fab.com

Background: Cast-Fab Technologies operates a gray and ductile iron foundry which produces mostly large pieces for the energy and transportation industries from pig iron and scrap metal. Some pieces are painted and/or coated onsite.

EJ: The EPA uses an environmental justice (EJ) screening tool called EJSCREEN to identify areas with disproportionately high environmental and public health burdens. It combines indicators in the categories of health, environment, and social demographics to identify, in an analytically rigorous and consistent manner, potential disproportionately and adversely affected areas. According to EJSCREEN, Cast-Fab is located in an EJ area.

Purpose of Inspection

To assist in determining compliance with rules and regulations promulgated under the authority of the Clean Air Act.

Entrance and Opening Conference

We (Eleanor Kane and Patrick Miller of EPA) arrived at Cast-Fab Technologies located in Cincinnati, Ohio ("Cast-Fab," or "the facility") at approximately 2:00 p.m. on Monday, September 23, 2013. Outside the facility, we were joined by Amy Kesterman, an Environmental Compliance Specialist with the Southwest Ohio Air Quality Agency. We entered the facility and asked to speak with the person in charge of environmental compliance.

We were greeted by Mr. Farley Houston, Vice President in charge of Human Resources, and brought to a conference room. We presented our credentials and explained that we were there to perform an unannounced inspection of the facility under the Clean Air Act. We said we would like an overview of the facility, including information about air pollution controls, and a tour of the plant. We explained that if any of the information provided during our discussions or during the tour was considered Confidential Business Information (CBI), he should let us know so that we can mark it as such in our notes and handle it according to federal law and EPA policy. No CBI was collected during our inspection. We said we would like to take photographs during our inspection, and agreed not to photograph proprietary process equipment.

Facility Overview

Cast-Fab has been operating as a gray and ductile iron foundry, fabrication and machine shop on this site since 1988. About 225 people are currently employed at the facility. They make castings ranging in size from 5 to 80,000 pounds, though most of the products are large items for the energy and transportation industries. Mr. Houston stated that in 2012 they poured about 18,500 tons of iron, of which 5,145 tons were ductile iron.

Cast-Fab operates under a Title V Operating Permit issued by the Ohio Environmental Protection Agency (OEPA) on September 12, 2011. Cast-Fab is a major source of hazardous air pollutants (HAP), and is therefore subject to two rules under 40 C.F.R. Part 63, National Emissions Standards for Hazardous Air Pollutants (NESHAP):

- Subpart EEEEE for Iron and Steel Foundries
- Subpart MMMM for Miscellaneous Metal Parts and Products Surface Coating

In 2008, Cast-Fab reported emissions of 15 tons of benzene, 428 pounds of Chrome, 42 tons of PM10, and 35 tons of PM2.5.

According to Mr. Houston, all emissions from the facility are fugitive. A stack is visible from the exterior of the building, but Mr. Houston explained that the stack was disconnected in 1986. No emission testing has been done at the facility, but Method 9 readings have been performed in the past for some of the baghouses.

Cast-Fab begins with pig iron and scrap metal, with some copper, carbon and alloys for specific recipes. Mr. Houston stated that no lead is added to the furnace. Raw materials are heated in a scrap pre-heater and are then melted in one of three electric induction furnaces (EIF). Two of the furnaces are 10 tons, and one is 15 tons. Two furnaces are able to operate at any given time. The EIF tips to fill a ladle, which then transports the metal to the mold. For grey iron, the ladle is open. For ductile iron, the ladle is covered to limit emissions and inoculation is done within the ladle. A manganese blend is used in this process. When the inoculation is complete, the molten metal is poured into the prepared molds. There are no air pollution controls used during pouring.

Once cooled, the molds are sent to one of three shakeout lines: small, medium and large.

Finally (for the casting part of the process), the pieces are finished and cleaned per the customer's specifications. Some of these grinding processes are controlled by dust collectors.

On the fabrication side, there are welding and machining operations, which are permitted as insignificant sources of emissions. Coating operations are subject to a limit of 3.5 pounds of VOC per gallon, as a daily weighted average. There is no metal plating on site.

Sand and a binder (toluene sulfonic) are used to create the molds for the casting process for large pieces. For smaller pieces, greensand and phenolic resins are used. Sand is recycled and pneumatically conveyed from shake-out for reuse. At some point in the past, a thermal sand reclaimer was installed, but it has been about four years since it was last operated and Mr. Houston reported that it has been disconnected.

We asked Mr. Houston about reported chromium emissions and he was not sure the source of those emissions. He conferred with his consultant, Mr. Mike Zimmer, who said he thought that Chromium was included on the MSDS for certain ingredients.

We also asked about the high reported benzene emissions, and Mr. Houston explained that the emission factor from a study of the shakeout process at another facility (possibly conducted by the Army) was used.

Facility Tour

At about 10:15 a.m. we began a tour of the facility. We inspected the casting, fabrication and coating processes. We took 50 photographs.

Closing Conference

We concluded our tour of the facility and reconvened in the conference room to discuss some of our questions and conclude our inspection. We also went to Mr. Houston's office to review some additional records. We looked at compliance records for Subpart MMMM (a consultant uses the collected data to calculate HAP emissions and assess compliance), throughput records, and baghouse monitoring sheets.

We also received copies of two MSDSs for binders used in the molds.

We provided Mr. Houston with electronic copies of the 50 photos taken during the inspection.

We confirmed that none of the information collected during our inspection was considered to be CBI. We explained the next steps in the inspection process, and offered to send an electronic copy of the inspection report once it was completed and approved. We thanked Mr. Houston for his time and left the facility at approximately 4:10 p.m.